APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/824,045	04/03/2001	David Noy	27/186	9285

7590   11/05/2003

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EXAMINER
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ART UNIT	PAPER NUMBER
2173	7

DATE MAILED: 11/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _03 April 2001_ .

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-72_ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) _1-7,9-19 and 21-24_ is/are allowed.

6)☒ Claim(s) _25-31,34-43,46-55,58-67 and 70-72_ is/are rejected.

7)☒ Claim(s) _8,20,32,33,44,45,56,57,68 and 69_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)   4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)   5) ☐ Notice of Informal Patent Application (PTO-152)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _6_ .   6) ☐ Other: .

DETAILED ACTION

Claim Objections

1.   Claims 8, 20, 32, 44, 56,and 68 are object since the term "ABS" is not

defined.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35

U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3.   Claims 25, 34-37, 46-49, 58-61, and 70-72 are rejected under 35

U.S.C. 102(e) as being anticipated by Tahara et al ("Tahara", USP 6362842).

Regarding claims 25, 37, 49, and 61, Tahara teaches a method for

implicitly resolving pointing ambiguities in human-computer interaction,

comprising the steps of intending by a user to select a user targeted object from

a plurality of at least two objects in an object domain displayed by a computer

executing a computer application including a pointing mechanism featuring a

pointer dynamically moveable throughout said object domain (col 4, lines 1-5);

moving by said user said pointer towards said user targeted object (col 2, lines

38-42); implicitly resolving by said computer the pointing ambiguities by implicitly

analyzing user movements of said pointer towards said user targeted object

located in said object domain (col 2, lines 12-14) and predicting said user

targeted object (line 65 of col 1, to line 2 of col 2), whereby said implicitly

analyzing and predicting are performed by using at least one category of

heuristic measures selected from the group consisting of implicit user pointing

gesture measures (col 2, lines 12-14) and application context measures (col 10,

lines 10-15).

Regarding claims 34, 46, 58, and 70, Tahara teaches said category of

implicit user pointing gesture measures includes particular types of exact pointer

position heuristic measures selected from the group consisting of distance of said

pointer from center of said user targeted object and direction of said moving by

said user said pointer towards said user targeted object (col 9, lines 8-14).

Regarding claims 35-36, 47-48, 59-60, and 71-72, Tahara teaches that

said category of application context measures is based on context, of said

selecting said user targeted object by said user, including any information

external to said selecting and relevant to understanding said selecting said user

targeted object (col 10, lines 10-15).

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described
> as set forth in section 102 of this title, if the differences between the subject matter sought to
> be patented and the prior art are such that the subject matter as a whole would have been
> obvious at the time the invention was made to a person having ordinary skill in the art to which
> said subject matter pertains. Patentability shall not be negatived by the manner in which the
> invention was made.

5.   Claims 26-29, 31, 38-41, 43, 50-53, 55, 62-65, and 67 are rejected under

35 U.S.C. 103(a) as being unpatentable over Tahara and Schmidt et al

("Schmidt", "Motor-Output Variability: A Theory for the Accuracy of Rapid Motor

Act")

Regarding claims 26, 38, 50, and 62, Tahara does not teach the

speed-accuracy tradeoff heuristic measures. However, such feature is known in

the art as taught by Schmidt. Schmidt teachers a theory for accuracy of rapid

motor act which comprises the teaching of speed-accuracy tradeoff heuristic

measures to focus on error detection and correction (Page 415). It would have

been obvious to one of ordinary skill in the art, having the teaching of Tahara and

Schmidt before him at the time the invention was made, to modify the predicting

method taught by Tahara to apply speed-accuracy tradeoff heuristic measures

taught by Schmidt with the motivation being to enable the system to focus on

error detection and correction.

Regarding claims 27, 39, 51, and 63, Schmidt teaches total movement

time (TMT) (movement time MT on page 415).

Regarding claims 28-29, 31, 40-41, 43, 52-53, 55, 64-65, and 67,

Schmidt teaches said category of implicit user pointing gesture measures

includes total movement time (TMT) heuristic measures based on applying Fitts'

Law for determining a total movement time parameter, TMT, for performing a

given task as a function of a size, W, of said user targeted object and a distance,

A, of said user targeted object from a pre-determined reference point, where said

Fitts' Law is described by a formula, said $TMT = a + b * \log_2[(2* A)/ W]$, where

said a and said b are empirically determined Fitts' Law parameters, said asterisk symbol, *, is a multiplication operator, and said factor $\log_2[(2 * A)/W]$ is an index of difficulty describing difficulty for said performing said given task in 'bit' units (page 415).

6.   Claims 30, 42, 54, and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tahara and MacKenzie ("Movement time prediction in Human-Computer Interfaces")

Regarding claims 30, 42, 54, and 66, Tahara does not teach the formula $TMT = a + b * \log_2[(A/W) + 1]$. However, such feature is known in the art as taught by MacKenzie. MacKenzie teaches Shanon formulation of Fitt's Law wherein $TMT = a + b * \log_2[(A/W) + 1]$ (see page 6). It would have been obvious to one of ordinary skill in the art, having the teaching of Tahara and MacKenzie before him at the time the invention was made, to modify the predicting method taught by Tahara to the formula $TMT = a + b * \log_2[(A/W) + 1]$ taught by MacKenzie with the motivation being to enable the system to accurately predict movement time.

Allowable Subject Matter

7.   Claims 1-7, 9-19, and 21-24 are allowed.

8.   Claims 8 and 20 are objected, but would be allowable if rewritten to overcome the objection set forth in section 1.

9.   Claims 32, 44, 56, and 68 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form to

overcome the objection set forth in section 1 and to include all of the limitations of

the base claim and any intervening claims.

10.   Claims 33, 45, 57, and 69 are objected to as being dependent upon a

rejected base claim, but would be allowable if rewritten in independent form

including all of the limitations of the base claim and any intervening claims.

11.   The following is a statement of reasons for the indication of allowable

subject matter:

Regarding claims 1 and 13, none of the prior art teaches or fairly suggests

the limitation "forming by said computer a set of candidate predicted user

targeted objects according to parameters selected from the group consisting of

pointer movement continuation parameters obtained from step (c) and pointer

position parameters; predicting by said computer said user targeted object from

said set of candidate predicted user targeted objects; suggesting by said

computer said best predicted user targeted object to said user; and making a

decision by said user, said decision is selected from the group consisting of

accepting, said computer suggested best predicted user targeted object as

said user targeted object and as correct, and, rejecting said computer suggested

best predicted user targeted object as not said user targeted object and as

incorrect, whereby if said decision is said accepting said computer suggested

best predicted user targeted object as said user targeted object, then said user

performs an acceptance action using said pointing mechanism, indicative that

the pointing ambiguities are resolved" in a specific combination as cited in claims

1 and 13.

Regarding claims 32, 44, 56, and 68, none of the prior art teaches or fairly suggests the limitation "extent by which said prediction of said size, W, of said user targeted object fits said reversed Shannon formulation of said Fitts' Law is defined as a fit written in a form, said fit = ABS (TMT - a - b * $\log_2$ [(A / W) + 1])" in a specific combination as cited in claims 32, 44, 56, and 68.

Regarding claims 33, 45, 57, and 69, none of the prior art teaches or fairly suggests the limitation "category of implicit user pointing gesture measures includes amount of fine tuning (AFT) or tail length (TL) heuristic measures for determining a tail length parameter, TL, of said user movement of said pointer as a function of a size, W, of said user targeted object and a distance, A, of said user targeted object from a pre-determined reference point, where said tail length parameter is described by a formula, said TL = a * W^2 + b * W + c, where said a, said b, and said c, are empirically determined (AFT) or (TL) parameters and said asterisk symbol, *, is a multiplication operator" in a specific combination as cited in claims 33, 45, 57, and 69.

12.   The prior art made of record on form PTO-892 and not relied upon is considered pertinent to applicant's disclosure. Applicant is required under 37 C.F.R. § 1.111(c) to consider these references fully when responding to this action. The documents cited therein teach about cursor movement which relates to the claimed invention.

13.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kieu D. Vu whose telephone number is (703-

605-1232). The examiner can normally be reached on Mon - Thu from 7:00AM to 3:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Cabeca, can be reached on (703- 308-3116).

The fax phone numbers for the organization where this application or proceeding is assigned are as follows:

(703)-872-9306

and / or:

(703)-746-5639   (use this FAX #, only after approval by Examiner, for "INFORMAL" or "DRAFT" communication. Examiners may request that a formal paper / amendment be faxed directly to them on occasions)

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703-305-3900).

Kieu D. Vu

10/24/03

JOHN CABECA
SUPERVISORY   TENT EXAMINER
TECHNOLOGY   NTER 2100